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## MANAGEMENT OF THE NATIONAL PARKS IN THE CONTEXT OF SOCIAL TRANSFORMATION PROCESSES. CASE STUDIES: THE STATE NATIONAL PARK PRIELBRUSIE (RUSSIA) AND THE TATRA NATIONAL PARK (SLOVAKIA)

The paper focuses on some aspects of effective management and criteria for sustainable tourism in national parks. Two case studies: the State National Park Prielbrusie (Caucasus Mountains, Russia) and the Tatra National Park (Western Carpathians, Slovakia) management are analysed in the context of social transformation processes. In both national parks the impacts of the transformation processes to the effectiveness of management are evaluated and strategic recommendations for improving management effectiveness are proposed. The paper was elaborated in the frame of the Slovak – Russian Science and Technology Cooperation project SK-RU-0008-07: "Integrating landscape ecology methods into research of sustainable management of mountainous regions (LE-MOUNTAIN).

### Introduction

During the 1970s, carrying capacity was advanced as a technique for managing tourism in sensitive environments (e.g. Eagles et al., 2002, Hrnčiarová et al., 1997). This encouraged managers to try to solve visitor use problems merely by setting limits to numbers based upon a pre-determined level, derived from ecological, social and other analyses. However, this approach has serious limitations. It is basically a restrictive concept, founded on limits and constraints. As a result it can be seen as working against protected area objectives designed to encourage appropriate visitor enjoyment and valuation of the resource. On the basis of the European models of good practices in protected areas Synge (2004) identified four main aspects of management:

- 1) **Zoning system:** within larger protected areas it is possible to pursue various management objectives in different parts of the area and reconcile potential conflicts through the use of zones. Zoning system is a possible way how to solve conflicts between environmentalists and developers.
- 2) **Visitor management:** the challenge for management is to ensure that the natural and cultural qualities of the area are safeguarded and that the enjoyment of visitors is achieved. Visitor management is how the park manager seeks to maximize the benefits and minimize the harm. Visitors are best controlled by soft means rather than hard. A crucial part of the park management is the ranger service.
- 3) **Monitoring system:** establishing and maintaining monitoring systems of the key features of protected areas is an intrinsic part of management. Without monitoring it is difficult to know whether the aims of the protected area are being achieved in practice.

- 4) **Collaborative management:** an important challenge for protected area management is to ensure that local communities and other local interests are also engaged. A key way of participation is allowing and encouraging people to take action directly.

The entrance information centres, so called gateways or service centres, are considered as a very appropriate tool for regulation of movement, concentration and also behaviour of visitors in national parks and other protected areas.

To attract visitors, it is important that a gateway is strategically located (e.g. at the border of the area) and that the facilities and activities offered at a gateway meet visitor demands. The gateway concept is not new and is widely used in North American national parks as a very useful means of visitor management. By Beunen et al. (2008) the context in which the concept is used in North America differs from the context in Europe.

Most national parks and protected areas in North America, where nature conservation and recreation are the primary function, have a limited number of entry points. In Europe, these areas have many entrances and many roads that lead through the areas for both visitors and for people who live or work in these areas. By the authors especially in Western Europe, national parks and protected areas are "living landscapes" with multiple uses. These areas often include not only tourism facilities but also residential buildings, farms, and many roads.

There are several practical and research projects and studies which are aimed on proactive tools supporting the effective management. By Hocking et al. (2000) the term management effectiveness includes three main components:



- a) design issues relating to both individual sites and to protected area systems;
- b) appropriateness of management systems and processes, and
- c) delivery of protected area objectives. By the authors design failures can, for example, lead to problems of protected areas that are too small to be effective, to fragmentation and isolation, to protecting disproportionate amounts of one habitat at the expense of others and to failure to leave room for adaptation to environmental change.

Management successes are particularly important in terms of communicating lessons learned. A well designed protected area with plenty of trained and dedicated staff will still not be achieving its objectives if, for example, poachers are depleting species or air pollution is damaging sensitive plants and animals. What is effective legislation in one country may be entirely inappropriate in another with different legal and social systems. Similarly, it is only possible to assess the adequacy of resourcing for management in the context of some estimation of management needs (Hocking et al., 2000).

As the IUCN Guidelines on Sustainable Tourism in Protected Areas state, "Protected areas need tourism, and tourism needs protected areas". Tourism provides recreation, which is a stated objective of most protected areas, and is the opportunity for enlightened environmental education, the results of which will win allies for conservation in general. It creates jobs and generates income for the local economy, and makes peripheral regions less isolated, opening up their residents to new influences and cultures but also encouraging an intense valuation of the local culture and natural assets (Eagles et al., 2002).

One of the aims of effective management in protected areas is to fulfil demands and criteria for sustainable tourism. Works of authors Gebhard et al. (2007, 2009) are devoted to this issue. There were projects with the aim to define criteria for sustainable tourism in selected European biosphere reserve. Good example is the project "Conservation and Sustainable Use of Biodiversity through Sound Tourism Development in Biosphere Reserves in Central and Eastern Europe", which has the aim to strengthen protection of globally significant mountain ecosystems in selected Biosphere Reserves (Gebhard et al., 2007, 2009). By Gebhard et al. (2007, 2009) sustainable tourism development can be a driving force for good governance which then contributes to the improvement of living conditions through a sound utilisation of public funds. The authors determined these clusters of criteria to mirror the answers to the question of sustainable tourism:

- Communities' well-being (income and revenues, employment, strengthening of the local economy and long term economic viability, improving of living conditions, participation in decision-

making and local control, satisfaction with tourism, strengthening of social and cultural patterns)

- Protection of the natural and cultural environment (sustainable use of natural and cultural resources, protection of natural heritage, protection of cultural heritage, enhancement of environmental awareness)
- Product quality and tourist satisfaction (quality of services and experience, tourists' satisfaction, tourism product quality and economic viability, communication of sustainability towards the tourists, cultural exchange as a driving force for peace)
- Management and monitoring (management and monitoring planning, carrying capacity).

### Characteristics of case study areas

The State National Park Prielbrusie (NP Prielbrusie) is located within the highest area of the Caucasus Mountains in the boundary of Russia with Georgia. Similarly the territory of the Tatra National Park (TANAP) occupies the highest part of the Carpathian Mountains in the boundary with Poland (fig. 1). These national parks were chosen as case studies with great potential of natural values, natural disasters and heavy tourism and recreational load. In both national parks numbers of visitors exceed the carrying capacity, especially above timberline.

#### The State National Park Prielbrusie (Russia)

The Central Caucasus can be characterised as a region with contradiction of unique natural landscapes and heavy anthropogenic impact. The typical economic activity of indigenous population is pasturing and cattle rising being the only sources of profit. Present-day increase of private live-stock causes irreversible changes of landscape resulting in erosion and loss of productivity. NP Prielbrusie is administratively positioned in the upper parts of Elbrus and Zolskiy regions of the Kabardino-Balkar Republic (central part of the Great Caucasus) and is located in the boundary with Karachaevo-Cherkessia Republic (Russia) and Georgia (fig. 1). It occupies the upper parts of the Baksan and the Malka river basins, which have sources at the margins of the Elbrus glaciers.

In this region mountain ridges are higher than 3000-3500 m a.s.l., valleys are deeply dissected. Slopes are steep and rocky and have palaeoglacial and modern glacial landforms. The volcanic relief represents the system of lava flows (the longest near 23 km) and plates of different age with two cone summits of Elbrus (5642 m.a.s.l. and 5621 m.a.s.l.). The lake-depression relief type is typical for some districts in the Malka valley. Tectonic movements and exogenic processes are active, and tremendous amounts of sediment – glacial, colluvial, proluvial and others – are present (Baume, Marcinek, 1998). The territory with modern glaciers occupies 155.5 km<sup>2</sup> (15.3% of the Park).



93 glaciers form in the Baksan river basin with the longest one Shkhelda and only 8 in the Malka basin.

Number of permanent inhabitants (with permanent abode in NP) is 5 812 inhabitants (January 1<sup>st</sup>, 2006). They live in the Elbrus municipality, which consists of 5 settlements (Elbrus is the biggest with 3373 inhabitants) and 1 separate settlement Verkhniy Baksan (444 inhabitants). All of them are in the Baksan valley that is known as the region of early occupation by ancient people even in Palaeolithic. Stand of this period ("Sosryko") as well as the later ones is located in the lower part of this valley on the way to the National Park. Several ruins of different historical periods remember us about colonization of this territory. This region is also one of the origin sites of Balkar people, which are the main indigenous population of these mountains. Twenty small settlements were situated (mainly on the debris flow cones) within the territory of modern Park until 1944 – the year of deportation of Balkar population. Settlement Verkhniy Baksan (former Urusbievo) was the centre of a big Balkar community for several hundred years, and first tourists of this region in the end of 19<sup>th</sup> century stood in the guest rooms of the domestic leader. The highest permanent settlement is Terskol (2130 m).

The Central Caucasus region has experienced expansion of recreation activities, mountain skiing in particular, over the last 10 years despite serious territorial limitations. Tourism replaces traditional stock-grazing more and more. New tourist objects are highly concentrated in the pine forest landscapes on the bottoms of the river valleys. The most crucial problem is a lack of attention of stakeholders to risk assessment and poor ecological regulations.

#### Tatra National Park (TANAP) (Slovakia)

Biological and conservation values of TANAP are: (a) bio-geographical position – Central-Carpathian species; (b) different habitats: virgin and native forests, meadows, wetlands, alpine biotopes; and (c) high species richness of the High Tatras - typical of the mountains and Alpine region. TANAP is located in the area of the Western Tatras and the Eastern Tatras (consist of the High Tatras and Belianske Tatras). TANAP area is characterised by monumental forms of high mountain glacial relief, unique in the Carpathians, impressive karst relief (esp. Belianske Tatro but also Sivý vrch, Osobitá in the Western Tatras). There are around 100 tarns (the largest one is Velké Hincovo pleso tarn has 21 ha and is 53,7 m deep) and nice huge waterfalls (the highest



Fig. 1 Location of the Tatra National Park in Slovakia and the State National Park Prielbrusie in Russia



80 m Kmetov waterfall is in Nefcerka valley). TANAP is located in the northern part of Slovakia (on Slovakia's northern border with Poland). Administratively the western part of TANAP is situated in the Žilina region and the east part in the Prešov region. In the surroundings of the Tatras there are other national parks, such as Pieniny NP, with its famous attraction of a trip down the River Dunajec on a traditional raft, the opposite standing Low Tatras NP and the Slovenský raj ("Slovak Paradise") NP (fig. 1).

The High Tatras represent the highest part of the Carpathian Mountains with the highest peak Gerlach (2655 m.a.s.l.). These mountains have the only alpine character in Slovakia. The main ranges in the TANAP are: the Západné (Western) Tatras with 37 km, the Vysoké (High) Tatras with 26 km, and the Belianske (White) Tatras with 14 km length. Over 25 of the mountain peaks in TANAP reach to heights above 2500 m.a.s.l. About 300 caves are situated in the Park, but only one (Belianska Cave) is open to public.

Number of permanent inhabitants (with permanent abode in TANAP area) is about 5000 residents (May 2<sup>nd</sup>, 2006). They live in the town Vysoké Tatry (High Tatras), which consists of the 15 small settlements (town parts). The municipality of Vysoké Tatry was created in 1947 on the territory the distinct smaller settlements. The present-day town was created in 1990 and has 15 town parts. Seven town parts of the town of Vysoké Tatry have special statutes of the spa areas. It covers an area of 398 km<sup>2</sup> and is located in the central part of the High Tatras Mountains range. Central transport link for the town is the "Road of Freedom" (Cesta Slobody). Number of inhabitants in the town has during last years decreased (e.g. in 1998 there were 5471 inhabitants) (Bohuš st. a Bohuš ml., 2008). Together 19 municipalities and towns occur in the territory of TANAP and its protective zone (with 128 908 inhabitants, December 31<sup>st</sup>, 2003) (<http://www.tatry.sk>, Izakovičová et al., 2008).

Tatra region is inhabited by the same nations as the rest of Slovakia. From the point of ethnic structure more significant representation. From the view of historical development it is needed to point out that during the 12th century the Tatra region was settled mostly by Germans from Saxonia. The first villages were founded on Tatra slopes during the 13<sup>th</sup> century. The first news about mountain trips in the Tatra area are from the 16<sup>th</sup> century (Izakovičová et al., 2008). The most interesting from the villages are Štrbske Pleso (the highest Tatra village - 1335 m.a.s.l., situated beside a lake of the same name, founded in 1885, now it is a part of Štrba village), Starý Smokovec (the oldest Slovak spa, at present the town part and administrative centre of the town Vysoké Tatry), Tatranská Lomnica (the largest town part of the town Vysoké Tatry and tourist centre in the area, there is the Museum and Research Station of the State Forests of TANAP) and Tatranská Kotlina (spa in Belianske Tatras).

There are other interesting villages such as Ždiar (the centre of goral's folklore, the Ethnographic museum the House of Ždiar open in 1973) and Zuberec, the starting

point for tourism in Western Tatras. In the national park TANAP and its surroundings there are three open air museums: Museum of Orava Village (Brestová / Zuberec), Museum of Liptov village (Pribilina) and Tatras Museum (Poprad) (Izakovičová et al., 2008; Bohuš st., Bohuš ml., 2008; <http://www.tatry.sk>).

Among the main problem issues on the TANAP territory there can be included the impact of tourism, recreation and sport activities, building and infrastructure development and traditional forest management. Other serious problems are long-term conflicts as a result of unclear property relations and unsolved competences in decision taking. All these problems were disclosed very clearly after the severe windstorm in November 2004. Wide public discussions about future development of Tatra region have started after severe windstorm affected 12 000 ha of the national park.

### Methods and approaches of research

Research activities of the project SK-RU-0008-07: "Integrating landscape ecology methods into research of sustainable management of mountainous regions (LE-MOUNTAIN) have been concentrated in the years 2008-2009 to the field research and consultation of the authors with responsible persons from administrative bodies of the national parks and other collaborating organisations and institutions. Activities have been connected to the previous projects and expertises, in which the authors of this paper were involved. Russian team members have participated in preparation of basis for the NP "Prielbrusie", in creating the Atlas of this Park, and several scientific projects including "Assessment of grazing impact and industrial pollution on landscapes" in 1992-1994 (Khoroshev, 1998), landscapes of the Baksan river basin (Petrushina, 1992) and "Investigation of spatial-time organisation in zones of the debris flow and avalanche activity" in 2003-2008 (Petrushina, 2008). The Slovak team members have participated in elaboration of the strategic study "Towards sustainable development of the Tatra region" (see Huba et al., 2005) and the study "Landscape ecological spatial optimisation and functional land use of the Tatra Biosphere Reserve of UNESCO" (elaborated by the National Committee for the UNESCO MaB programme in cooperation with the Institute of Landscape Ecology SAS in the 2005-2006 (see Izakovičová et al., 2008).

The methodological procedure was realized in these steps:

- Analysis of history of the establishment of national parks, the current state of their management in the context of social transformation processes and visitors' pressure;
- Determination of common social transformation processes which cause positive or negative driving forces in both national parks (tab. 1);
- Identification and comparison of the management effectiveness aspects in both national parks (tab. 2 and tab. 3);



- Summarising and comparison of main strengths and weaknesses of the national parks;
- Strategic recommendations for improving management effectiveness in both national parks (conclusions and recommendations).

At the selection of the aspects supporting effective management of national parks we went out from the works of following authors: Hocking et al (2000), Eagles et al. (2002), Syngé (2004), Hamilton, McMillan, 2004; Beunen et al. (2008) a Gebhard et al. (2007, 2009). There are three tables: Evaluation of assumed impacts of the principal social transformation processes on management and support of tourism in both national parks (tab. 1) and chosen aspects of management, collaborative organisations and institutions in both parks (tab. 2 and 3). These tables are assembled from authors' research works and other available information from different works and studies: (e.g. Kubíček et al., 1997; Vološčuk, 2000; Vološčuk et al., 2004, 2006; WWF, 2004; Burda et al., 2005; Huba et al., 2005; Kluvánková-Oravská, Chobotová, 2006; Seinova et al., 2001, 2007; Hanušin et al., 2007; Izakovičová et al., 2008, Švajda, 2008, 2009a), basic documents of national parks Prielbrusie and TANAP, field works of the authors and other sources (<http://elbrus-cheget.ru>, [www.spravatanap.org](http://www.spravatanap.org), [www.sopsr.sk](http://www.sopsr.sk), [www.lesytanap.sk](http://www.lesytanap.sk), [www.tatry.sk](http://www.tatry.sk); [www.tanap.org](http://www.tanap.org), [www.vysoketatry.sk](http://www.vysoketatry.sk)).

The second part of the project LE-MOUNTAIN activities has been concentrated to the identification of landscape changes as a consequence of the transformation processes and current management in national parks (see article of the authors Kozová et al., 2009).

## Results

### Analysis of history of national parks establishment, the current state of their management and visitors' pressure

#### *The State National Park Prielbrusie (Russia)*

NP Prielbrusie was established as a national park by the Act of the Russian Federation No. 407 in September 22, 1986 with some changes, which were done in 1995. All Russian national parks (including NP Prielbrusie) are in the responsibility of the federal government. The main aim of this Park is the conservation of unique nature and the development of sustainable ecological recreation and tourism. This region is specific alpinist and tourist "Mekka" due to the position of Elbrus Mountain (5642 m), the highest one in Russia and Europe. Total area of the NP Prielbrusie is 1012 km<sup>2</sup>. 62.5% of land is owned by the state and the rest (37.5%) is owned by private owners or communities.

NP Prielbrusie corresponds to IUCN category II for protected areas (National Park) (Sokolov, Syroechkovskiy, 1996). In the east it is connected to the adjacent Kabardino-

Balkar reserve. NP Prielbrusie Administration (governing body) similarly as authorities of other national parks in Russia is a legal subject (independent juridical body) and can make decisions and negotiate directly with other stakeholders (municipalities, settlements, private subjects, contractors etc.). Seat of the Administrative body is in Elbrus municipality. The Scientific-Technical Council was established in the frame of the NP Prielbrusie which consists of representatives of all important local or regional subjects. The Council provides basic documents, which are submitted and consulted with the responsible bodies of the Kabardino-Balkar Republic. At present the NP Prielbrusie has together 58 employees (august, 2009): 5 inspectors for forest protection, 28 inspectors for nature conservation, 5 - for science, tourism and recreation, and other employees are dealing with administration and economic issues. In next years they will pay higher attention to ethnography (e.g. inventory of all old settlements and historical monuments).

The recreation impact began in the 1930s with building of some alpinist and tourist centres. Famous "Priyut-11" was constructed in 1938 on the slopes of Elbrus at the altitude of 4150 m.a.s.l. The period of the Second World War and deportation of local population was characterized by decrease of recreation until the late 1950s - early 1960s when the motorway was constructed in the Baksan valley. This period was marked out by reviving of recreation and active construction of recreation objects.

The first tourist centres were built since 1935. Since 1930s some alpinist camps were constructed in the 50 health resorts. But more intensive development of infrastructure was in the 70-80<sup>th</sup> years. More than 3.5 mil. people visited Prielbrusie in 1980s. The number of visitors increased by the late 1980s thousand times as much as in 1955, the amount of cars – in 2-2.5 times. The recreation slightly decreased in 1990s resulting in conservation of recreation facilities. Last decade is distinguished by intensive recreation especially of recreation construction and expansion of settlements. Seven alpinist bases, more than 30 hotels are situated within the park area nowadays.

At present there are about 350 000 visitors per year. Most of them have visited the national park in winter. The higher number of visitors was in the era of the former Soviet Union. After „perestrojka“ the number of domestic visitors is decreasing, but on the other hand the number of foreign visitors is increasing.

#### *Tatra National Park (TANAP) (Slovakia)*

The TANAP is the Slovakia's first national park established in 1948 after years of preparation work. TANAP was established by the Act of the Slovak National Council No. 11/1948 from December 18, 1948. The Park is important for its unique alpine and subalpine ecosystems, diverse flora and fauna with many endemic species, mountain range formed by glaciers, and also for its mountain's usage for therapy, recreation and sport.



Since 1987 the Western Tatras were affiliated to TANAP by Governmental Regulation No. 12/1987. By the Governmental Regulation No. 58/2003 the total area of the national park and its protective (buffer) zone was adapted. According to this regulation the total area of TANAP is 1045 km<sup>2</sup> (including 738 km<sup>2</sup> area of national park and 307 km<sup>2</sup> of its protective zone). In the relation with ownership there are two milestones. The first one was after February 1948 when the land was confiscated and the second one after November 1989 when it was reprivatized. By the present-day situation there is 52 % of the land in TANAP owned by the state and the rest (48%) is owned by private owners and by local communities (Izakovičová et al., 2008).

TANAP together with the Tatra National Park in Poland (established in 1954) became in 1993 a part of the UNESCO Man and Biosphere Programme and created UNESCO Transboundary Tatra Biosphere Reserve. Since 2004 TANAP belongs to the NATURA 2000 ecological network of European important habitats.

TANAP corresponds only to some of the primary management objectives to IUCN category II for protected areas (National Park). It was confirmed by the IUCN mission in Slovakia in April 2005 (IUCN, 2005). In February 2007 there was signed Memorandum on Mutual Collaboration between the TANAP Administration and Tatra National Park in Poland. Memorandum had several goals. Except other mutual goals it enables to find possibilities to reach the main strategic goal which is to create a long successful existence of a mutual transboundary bilateral park. It presents a mutual will to respect the primary management objectives of IUCN category II for national parks.

TANAP Administration (governing body) has only an advisory / expert role in the management of land within the national park. It is the part of the State Nature Conservancy of the Slovak Republic. Prior to 1994 TANAP Administration was a single authority for administration of the public responsibilities for the TANAP. The TANAP and the State Forests of TANAP were one organization supervised by the Ministry of Agriculture and Forestry, with the Ministry of Environment to oversee the implementation of Nature and Landscape Protection. In 1996 a new TANAP Administration was created, supervised by the Administration of all National Parks of the Ministry of Environment of the Slovak Republic and this was separated from the State Forests of TANAP, later they were incorporated to the State Nature Conservancy of the Slovak Republic together with all Landscape Protected Areas. These changes have emasculated the nature and landscape protection responsibilities.

At present TANAP has no advisory body. In 1952 the Advisory Board was established. This Board acted as a higher body for the issues of TANAP. In the same time TANAP was the executive body.

Current seat of the Administrative body of TANAP is Tatranska Strba. There is also Tatranska Strba the seat of the Regional Centre of the Nature Protection which involves

the Administrative body of TANAP and the Administrative body of Pieniny National Park.

TANAP has together 32 employees (august, 2009): 8 specialists for nature protection, 6 specialists for landscape management; and 16 ranger service (rangers) and 2 administration and economy. Rangers play a very important role in co-operation with the local population, stakeholders and local government and are primarily engaged in practical protection of the national park territory. Their tasks are: assuring observation of regulations, regulation of visitors, applying management measures, marking protected areas, providing information and education services and co-ordinating approximately 90 voluntary rangers ([www.sopsr.sk](http://www.sopsr.sk)).

The first tourist centres and spas were built in 19th century. But intensive tourist development together with development of spas, health resorts and sanatory areas started in the beginning of the 20th century. Important mineral and thermal water springs are in Starý Smokovec, Dolný Smokovec, Tatranske Matliare, Kežmarské Žlaby, and Lendak. The town Vysoké Tatry, including 15 settlements – town parts, has a special Act (by law) as a spa area (the first one was approved in 1957). Especially after 1945 the number of visitors started to increase dramatically. In 1961 the number of visitors was 1.2 mil. in 1978 it was 1.6 mil. Historically the highest number of visitors was in 1988 (5.1 mil. of visitors). By report of WWF (2004) TANAP was identified as the most vulnerable national park in Slovakia. Number of visitors is (at present) about 3-3.5 mil. per year and still exceeds the carrying capacity ([www.tatry.sk](http://www.tatry.sk)). It is estimated that 40 % of all visitors climb up to the alpine environment.

Since 1972 monitoring of number of visitors in the alpine environment is realised by the State Forests of TANAP, the Administrative body of TANAP and Polish Tatra National Park. They collect the data about particular localities and marked tourist paths. According to the monitoring of visitors in TANAP there were noted in August 2009 almost 21 000 visitors in one day. If it is compared to the former period there were 20 000 visitors in 1975 in one day and in 1981 it was 26 520 visitors.

(<http://www.lesytanap.sk>)

#### **Determination of principal social transformation processes which cause as positive or negative driving forces in both national parks**

Each country (Russia and Slovakia) or region (Caucasus region, Tatra region) has its own cultural characteristics, patterns of historical evaluation, level of economic and infrastructural development, environmental attributes etc. In spite of that it is possible to identify common principal social transformation issues as key driving forces influencing the management of national parks and supporting the tourism. These processes have started in Slovakia since 1989 and in Russia since 1992. For example, from 1992 a privatisation process in TANAP has transferred about half of the area of the national park back

| Examples of the social transformation processes  | Examples of assumed impacts of the social transformation processes on management and support of tourism in the national parks   |  |
|--|---|--|
|  | Positive examples   | Negative examples  |
| Privatisation of land and changes in all sectors of social life  | Restitution of the land and real estates to the owners.<br>New possibilities for territorial development.<br>Free movement possibilities.<br>Private business.<br>Arrival of foreign investor.  | The big share of land in protected areas is private and at the same time there is complicated and highly fragmented ownership (especially in Slovakia) and still no effective system of compensation or renting out the land and forest owners. In Russia there is no system of compensation or renting out the land and forest owners.<br><br>Restitution of the land ownership in TANAP resulted changes in enforcement of hunting rights, which could have a negative impact on the natural environment.  |
| New economic conditions and introduction of local market economy   | New jobs making and possibilities for support of local economy.<br>Gradual improvement and spreading of services for visitors and local inhabitants.<br>TANAP has very good accessibility by public transport and visitors have good choice of ways to reach the park by road, rail transport. There is an airport near by.<br>Making new information centres and tourist marked paths (especially in TANAP).   | Intensive pressure of different lobby groups with the aim to influence planning documentations and results of decision-making processes.<br><br>Large areas of forests were cut as a result of recreation impact and building of infrastructure (mainly winter sports) – especially in NP Prielbrusie.<br><br>In both national parks only limited amount of all financial sources, which come from national park are also coming back.<br>NP Prielbrusie has limited connection by the only motorway along the Baksan river valley. After "perestrojka" there is very limited regular public transport and most transportation is performed only by private taxis and tourist coaches. |
| Rapid urbanisation   | Upgrading of accommodation and other services.<br>Possible improvement of better residence conditions, built an infrastructure and other services for local inhabitants.  | Number of visitors and extent of infrastructure were increased and tourism and recreation pressures exceed limits of carrying capacity.<br><br>Sprawl of commercial and recreational sites with big impacts on landscapes and there structure. Little attention to the architectural style of new buildings.   |
| Fundamental structural changes of local and regional governance and shift of competences from national level to regions                            | Most of powers in social and environmental area were shifted to regional and local level. The powers were strengthened for local and regional self-governance.<br>Elbrus municipality administers the NP Prielbrusie and is responsible for the General Plan.<br>NP Prielbrusie is the independent juridical body and can make decisions and negotiate directly with other stakeholders.  | The governance structure in place is still traumatised by low law enforcement and conflicts with beliefs.<br><br>No clear authority is in TANAP and conflicting competences between state agencies such as forestry and national park management are increased (it is a case of Slovakia). Blocked the process of new zonation implementation.<br><br>Institutional changes have emasculated the nature and landscape protection responsibilities in TANAP. There is also negative trend of centralisation in the nature management. During last years the   |
| New legislation and policies on land use planning, regional planning, environment, agriculture, water management, nature, and landscape protection | New legislation and policies have been implemented as a reason of social changes and transformation processes.<br>E.g. Slovakia as a member of the EU has implemented new rules to the national legislation as a consequence the integration the EU legislation. The so-called EU Natura 2000 network of protected areas and wildlife species in the management of TANAP.   | Remarkable overgrowing of the urban structure into the lands recently un-build, new mixed patterns and short-term oriented projects. There are no strategic plans and systems of zonation for both national parks.<br><br>In spite of new legislation serious ecological problems are in both national parks: e.g. conflicts between nature protection, development of recreation, and forest management.  |
| New institutions and rules supporting democratisation, partnerships and information centres for visitors   | There were made new possibilities for participation for local people, civic associations and initiatives to processes of preparation the strategic documents and to the decision making processes. Reinforce local partnerships, public movements and initiatives against proposals of new investments with negative impacts. There were new NGOs (valid for TANAP). For example new proposal of the TANAP Management Plan was prepared by the participative planning.<br><br>The Scientific-Technical Council was established in the frame of the NP Prielbrusie which consists of representatives of important local or regional subjects.<br><br>The TANAP and Tatra National Park in Poland signed the Memorandum of the Mutual Cooperation in February 2007. | In both national parks there is absence of appropriate measures for encouraging sustainable behaviour of private and community owners.<br><br>In NP Prielbrusie there is the lack of transboundary cooperation. Boundary is a barrier for development of tourism.<br><br>TANAP Administration has only an advisory / expert role on the management of land within the national park.<br><br>TANAP has no Advisory Council in the frame of the TANAP Administration, where were representative of all key stakeholders.   |

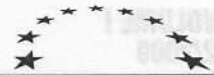
Tab. 1 Examples of assumed impacts of the principal social transformation processes on management and support of tourism in both national parks





| Aspects of management                                 | State National Park Prielbrusie (Caucasus, Russia)   | Tatra National Park – TANAP (Carpathians, Slovakia)  |
|---|--|--|
| Zoning system   | <p>Functional three zones of national park are established:</p> <ul style="list-style-type: none"> <li>- Reserve zone accounts for 553.27 km<sup>2</sup> (74.1%).</li> <li>- Recreation zone for 159.84 km<sup>2</sup> (21.4%).</li> <li>- Economic activity zone for 33.40 km<sup>2</sup> (4.5%).</li> </ul> <p>Functional zones and regimes of allowed land use are poorly marked. Natural boundaries restrict accessibility of strictly protected areas.</p> <p>A new zoning system started to prepare since 2009. Component part of a new zoning system would be a change of the national park boundaries (in the North and the East part of the Park). North part decreases and extends the eastern area to connect to adjacent reserve.</p> <p>National Park corresponds to IUCN category II for protected areas (NP).</p> | <p>The first proposal of zoning system for the TANAP was elaborated in 1967. The second one was taken from the zoning system of the Tatra Biosphere Reserve (elaborated as a part of the nomination letter in 1990-1991). A new proposal for zoning system was submitted for the public discussion in 2004, but still is under discussion. The proposal of zonation was made according to valid methodology and scientific criteria (evaluation according to its origin and character of nature) and NATURA 2000.</p> <p>According to the new zoning system the Zone "A" will account still only 54% from the total area of TANAP<sup>1</sup>. Zone A consists of 27 national nature reserves (with the total area of 37 977.13 ha), 24 nature reserves (with the total area of 1 063.34 ha), 3 national nature monuments (caves) and others nature monuments.</p> <p>TANAP corresponds only to some of the primary management objectives for an IUCN category II for protected areas (NP)</p> |
| Visitor management                                    | <p>At present the NP Prielbrusie has no Visitors' Order (Regulations) and information centres are under preparation.</p>   | <p>TANAP has Visitors' Order (Regulations), which was approved in 1999. New one was submitted for public discussion in 2004 and will be approved after acceptance of new zoning system.</p> <p>Information centres are located in all tourist centres and they are integral part of the tourist agencies. In TANAP and its surroundings there are 7 information centres, 11 tourist information agencies and 4 Museums of nature and rustic architecture. Problems with visitor management is described also in Švajda (2009b) – e.g. old knowledge and approaches, lack of proactive visitor management, interpretation of natural disasters.</p>   |
| Number of visitors (actual date)                      | <p>About 350 000 visitors per year</p>   | <p>About 3-3.5 mil. per year</p> <p>It was noted on the 8<sup>th</sup> August 2009 almost 21 000 visitors in one day in alpine environment.</p>  |
| Monitoring system of visitors and quality of services | <p>Only limited monitoring system of visitors and quality of services are realised.</p>  | <p>Since 1972 it was yearly realized monitoring of visitors in alpine environment.</p> <p>During 3-day research in summer 2009 there were found out the visitors' opinion of the condition of nature, the style of its preservation and on the quality of provided information and services.</p> <p>In the study period from May 31, 2008, to November 20, 2008, a counting device with pyroelectric detector (Eco Twin) registered the exact number of tourists entering the specified sector of the hiking trail. There is strong need to introduce new automatic methods of visitors monitoring because existing data are based only on few day manually countings during summer season (Švajda, 2009a).</p>  |
| Ecological infrastructure                             | <p>In NP Prielbrusie there is only low level of infrastructure for ecological tourism e.g. there is lack of arranged ecological trails, absence of nature museum, lack of ecological information and insufficient information on nature protections status. Summary length of trails for one-day trips by foot is about 35 km. There are only limited bike routes and no constructed mountain bike routes. Information is dispersed among small shops and hotels. Scientific potential of institutions performing research in the park is used to a limited extent. However information centres are planned to be created.</p>   | <p>In TANAP there are 20 main very well marked tourist paths more than 650 km long. Tourists in TANAP can use 12 marked paths for climbing to the peaks (mounts) higher than 2000 m. In the territory TANAP and its protective zone there are 8 instructive trails.</p> <p>In TANAP there are more than 200 km cycle tours. They are connected to the international Poland-Slovak cycling artery (magistrala). New parts of mountain bike routes are under construction.</p>   |

Tab. 2 Evaluation of selected aspects of TANAP and the NP Prielbrusie management which are supporting effectiveness of management and sustainable tourism



1/A zone – (in Slovakia) represents a zone without any active human interference, where the strictest 5th degree of protection is applied. The zone comprises a territory of the most precious natural heritage. Especially the highest regions of the national park, forming a compact core of the park, are included in the A zone. Moreover, well preserved representative ecosystems in lower parts are also included, giving the A zone a scattered character in these parts.

those who owned it before 1948, or to their descendants. Private Forest Owner Associations have been formed, and are now important partners in forest management with, however, more commercial goals than the park administration (Švajda, 2008).

In the tab. 1 there is a summarizing of assumed impacts examples of the principal social transformation processes with respect to criteria of sustainable tourism. While defining the criteria for sustainable tourism we went out from the publications of Gebhard et al. (2007, 2009).

### Identification and comparison of the management effectiveness in both national parks

The convenient tools supporting effective management of national parks are especially strategic plans of national park, zonation, ecological monitoring, regular monitoring of visitors and monitoring of their satisfaction with the services. Important role has making an ecological infrastructure. In tab. 2 there are compared selected aspects supporting effective management in monitored national parks.

It is needed partner's cooperation (at international, national, regional and local levels) of all organisations and institutions operating in the territory for the effective management of the national parks. Right now their competences and duties are critical.

Very important is information about competences and responsibilities of collaborative organisations and institutions and about strategic and planning documents elaborated for the national parks (see tab. 3).

### Discussion

Upon the current knowledge from management of national parks and another protected areas it is obvious that number of visitors are only one of the factors that have an influence the load of the environment. There is more particular part of the way of regulating the use of protected areas (mainly the zonation), location of activities (local plan), the way of regulation of the visitors movement (the visitors' order), increasing the environmental knowledge and other management regulations.

Practical experience from national parks clearly confirm the fact that properly processed zonation, good formulated visitors' rules, local partnerships, participative approach to planning process, superior knowledge on number of visitors and impact of their activities on natural environment together with knowledge about visitors' expectations help to solve conflicts of interests of various stakeholders. Very important is to plane and manage protected areas with full participation of local communities, not only inside but also outside boundaries of national parks or other protected areas. The proposal of a new Management Plan of TANAP and new zonation for the

TANAP prepared in 2004 by such a form of participative planning could be as examples. Public participation process and public hearing were realised as a part of the project Participatory and Sustainable Management of TANAP, funded by the Danish Cooperation for Environment in Eastern Europe (DANCEE) and implemented from March 2002 till September 2004 in close cooperation with TANAP and the NGO A-Project as consultants (Vološčuk et al., 2004; Švajda, 2008).

As both national parks are situated on state borders it is needed special realization and coordination of proposed activities, management including all stakeholders. In case of NP Prielbrusie there is significant barrier the state border and nowadays there is no agreement about transboundary cooperation. But in case of TANAP the state border has no barrier (especially after Slovak republic and Poland signed the Schengen agreement). As was mentioned above the TANAP Administration signed in February 2007 Memorandum of Mutual Cooperation with Tatra national park in Poland. It is needed to point out, that both national parks became a part of the UNESCO Man and Biosphere Programme and created UNESCO Transboundary Tatra Biosphere Reserve in 1993. The TANAP Administration, regional self-governance and other organizations realized number of bilateral projects supporting mutual activities and development.

Both national parks were established during communist regime (top-down approaches) with very poor discussion process with all relevant stakeholders. And now both national parks have big share of land in private ownership. Vološčuk (2003) underlines the organizational and scientific management of national parks with private and state ownership of land and forests as difficult to manage. It is needed more scientific employees, more financial sources, special form of ecological education, interpretation of the aim of the nature conservation and communication with the local inhabitants, local communities and visitors of national park.

In spite of negative or positive differences between legislation, institutions and management of the model national parks we can identify several very similar basic institutional problems (barriers), weaknesses, which are needed to solve immediately:

- In both national parks only limited amount of all financial sources, which come from national park are also coming back (there is no system for collecting money – e.g. entrance fees, environmental taxes, etc) Number of visitors and infrastructure were increased and tourism and recreation pressures exceeded carrying capacity in some areas.
- Intensive pressure of different lobby groups to decision makers with the aim to influence



| Cooperating organisations and institutions  | State National Park Prielbrusie (Caucasus, Russia)  | Tatra National Park – TANAP (Carpathians, Slovakia)   |
|---|---|---|
| Research activities   | <p>Research and monitoring are provided by Research centres of Moscow Lomonosov State University since 1969, High-Mountain Geophysical Institute (Nalchik), Institute of Geography of Russian Academy of Science, Medical-biological station of Ukraine Academy of Science. They perform scientific projects focusing mainly on present-day state of glaciers.</p> <p>Unique astronomic observatory on the altitude of 3050 m (Peak Terskol) and Neitrino observatory (1700 m) as well as three meteorological stations in Terskol (2150 m), Cheget (3000 m) and 3050 m (Peak Terskol) are working in the region.</p> | <p>Research and monitoring activities are providing by the TANAP Administration, the State Forests of TANAP and other scientific, research or professional institutions. There is an Astronomic Observatory in Skalnaté pleso (1783 m). First observations were realized in 1943. Since 1961 there is the Observatory of the Astronomic Institute of SAS on Lomnický štít (peak) (2 634 m) also Slovak Hydrometeorological Institute - SHMU.</p> <p>Now, there in the territory of TANAP operate some research bases of other academic institutions (e.g. the Institute of the High Mountain Biology of Žilina University).</p>                               |
| Other professional organisations and administrative bodies dealing with governance of the national parks' territories | <p>The Self-Governing Administrative of the municipality Elbrus, which is responsible for elaboration and acceptance of the General (master) plan for the development of the municipality Elbrus and for alternative dispute of resolution. Administrative cooperates with the NP Prielbrusie, has own representatives in the Scientific-Technical Council, and in the same time, it has competence to control the fulfilment of the major tasks of the national park.</p>  | <p>The TANAP State Forest (established by the Ministry of Agriculture), which used to be exclusively in charge of managing forest areas in TANAP until 1995, continues to serve the management of the national park in many aspects at the operational level. The State Forests of TANAP is not profitable and is dependent on budgetary support from the Ministry of Agriculture. TANAP State Forest Enterprise manages about 52% of the TANAP (with responsibility for the forest on the state lands).</p> <p>Municipalities and the Self-Governing Regions (Prešov and Žilina) have executive competences. Special position has the town Vysoké Tatry.</p> |
| Transboundary cooperation   | Lack of transboundary cooperation.  | Memorandum of Mutual Cooperation between TANAP and the Tatra National Park in Poland.   |
| Examples of active non governmental organisations   | Novy Acropol (New Acropolis), Ecological Society of Kabardino-Balkaria.   | A-Project, Civic Association Tatras, WOLF Forest Protection Movement, Civic Association for Save Tatra Chamois and transboundary Euroregion Tatry.  |
| Professional bodies responsible for taking care of visitors   | Special mountain defence service of Ministry of Emergency Situations. Every organized group of alpinists or hikers has to be registered before start. System for searching lost hikers and alpinists is relatively well-developed including air rescue service (helicopter).  | <p>TANAP Mountain Rescue Service (established in the High Tatras in 1950) – now there is Mountain rescue service managed by Ministry of interior with headquarter and workplace in Smokovec (<a href="http://www.hzs.sk">www.hzs.sk</a>) and Tatra Mountain Rescue service – voluntary corp as NGO (<a href="http://www.ths-dz.sk">www.ths-dz.sk</a>)</p> <p>The Air Rescue Service - system for searching and first-aid treatment providing to lost and wounded hikers and alpinists is relatively well-developed including the air rescue service (helicopter) – <a href="http://www.ate.sk">www.ate.sk</a>.</p>  |
| Organisation responsible for fire monitoring and warning system   | Special mountain defence service of Ministry of Emergency Situations<br>Foresters of the park   | <p>Coordination of fire prevention in the forests is providing by The Forests of the Slovak Republic. Fire protection services are performed by owners and users of forests. Those responsibilities are to report fires to the Fire and Rescue Service.</p> <p>The Air Fire Service was launched in 2001.</p>   |
| Strategic, planning and management documents  | Landscape planning proposal of functional zoning is in progress as well as development of regional strategic management plan. According to legal regulations each national park has to develop management plan for the five-year long period.   | <p>TANAP Management Program (was prepared in the early 1990s.) was approved by the government in 1991 and was valid until 2000. The new one was prepared and submitted for wide public hearing in 2004.</p> <p>Landscape Plan (2003 and its updating in 2005), proposal of zoning system (2004), projects and studies for sustainable development of the Tatra region, regional land use plans, regional strategic plans, local land use plans etc.</p>   |

Tab. 3 Collaboration with communities, professional organisations and institutions dealing with research activities, monitoring of visitors, governance and management in the national parks' territories



planning documentations and results of decision-making processes. Also managers of national parks with great competences are under high pressure e.g. from various lobby groups during decision-making processes regarding area and resource utilisation of the national parks.

- No system (NP Prielbrusie) and no effective system (TANAP) of compensation or renting out the land and forest owners needed to speed up its adaptation (Russia) or improving (Slovakia).
- Large areas of forests were cut (especially in NP Prielbrusie) as a result of recreation impact and development of infrastructure projects.
- Sprawl of commercial and recreational sites with big impacts on landscapes and their structure. Little attention to the architectural style of new buildings. The governance structure in place is still traumatised by low law enforcement and conflicts with beliefs.
- There are no valid strategic plans and zonation, which correspond with actual needs. g) In spite of new legislation serious ecological problems are in both national parks: e.g. conflicts between development of recreation, traditional forestry management and nature protection.
- In both national parks there is absence of appropriate measures for encouraging sustainable behaviour of private and community owners.
- In case of many approved management plans the financial and personal support is not secured.
- There is inappropriate development of mass tourism, from the expansion of existing tourism facilities to the development of new ski resorts.
- There are also conflicts of interests between recreationists in the same activity: conflicts can arise when an area is crowded or when a group is engaged in behaviour considered being inappropriate, unacceptable or obnoxious by others.

### Conclusions and recommendations

According reports of international organisations (WWF, 2004, IUCN, 2005), studies of Slovak organisations and institutes (see Huba et al., 2005; Kluvánková-Oravská, Chobotová, 2006; Izakovičová et al., 2008, Švajda, 2008), guidelines of IUCN (e.g. Hocking et al., 2000; Eagles et al., 2002) and our own research we can formulate strategic recommendations how to improve management effectiveness and support of sustainable tourism for both national parks:

- Administrations of both national parks should hold full competences and responsibilities for natural resources. It is very important to involve

local communities and private sectors in management. The public participation is not only a public decision-making process, but also a public hearing process including media.

- It is necessary to finish the zonation of both national parks (degree of protection) and synchronize three priorities: conservation of nature, owners, stakeholders and municipalities.
- It is necessary to create effective mechanisms for better involvement of local communities, landowners and other interests groups in decision-making processes on the level of the national parks.
- It is needed not only to develop, but also to regularly update by participatory way management plans and zoning systems for national parks. As a standard for management plans should serve international programme IUCN for category national park. It is recommended to develop explicit rules for each zone that reflect a compromise of different user groups' activities.
- The self-governance should initiate/elaborate a model of "certification" the subjects operated in national parks as labels of quality, tolerance, solidarity, partnership cooperation as a positive signal for visitors and criteria of sustainable tourism need attention (there are at least two movements in this area PAN Parks [www.panparks.org](http://www.panparks.org) and European charter of sustainable tourism [www.europarc.org](http://www.europarc.org)). It is necessary to support recovery function of the spas in the national parks.
- The Tatra region needs to renovate its unique architectural style, which was started in first decades of 20th century. The self-governance does not have developed responsible competent (scientific capacities and strategic documents). And thereby there has been deurbanization during last decades. Moreover it is necessary to pay attention to the architectural style in NP Prielbrusie.
- NP Prielbrusie has excellent opportunity to create better condition for multicultural communication with local Balkar people. Is the important advantage of NP Prielbrusie, in comparison with Tatra region, which is inhabited by the same nation as the rest of Slovakia. Preservation of Balkar national cultural and religious traditions is the prerequisite for development of cultural tourism which could be original supplement to traditional mountain tourism and alpinism. The NP Prielbrusie is the best place to locate the museum of Balkars.
- Great attention should be given to improving system of research and monitoring in both



national parks and implementation into practice – e.g. ecosystem based management plans, improving communication with stakeholders, better connection to regional economic programmes etc. (Svajda 2009b). It is necessary to improve the system of the information centres at the entrance. In the case of increasing tourism and recreation impose entrance fee system.

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